REMARKS

The foregoing Amendment amends Claim 13 and adds new Claims 24-29. Now in the application are Claims 1-29, of which Claims 1, 7, 13, 20, 22, 27, 28, and 29 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance. No new matter is added and no new issues are raised by these amendments. Accordingly, consideration of the proposed amendments requires no further search. Applicant respectfully urges the Examiner to reconsider the outstanding rejections and to pass the claims to allowance in view of the remarks set forth below.

Attached hereto is marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with Markings to Show Changes Made."**

Claim Amendments

Applicants note that Claim 13 is amended to correct a typographical error and is not amended to address any art rejection.

Title of the Application

The Examiner alleges that the title of the invention is not descriptive. Although the Applicants disagree with the Examiner's allegation Applicants' provide an amended title of the invention to help expedite prosecution of the application.

Drawing Amendments

Figures 6 and 7 are objected to for not including a "prior art" designation. Figures 6 and 7 are amended to include a "prior art" designation. Replacement Figures 6 and 7 are included herein.

Rejections under 35 U.S.C. §103

For purposes of clarity in the discussion below, the respective related claim sets will be discussed separately.

A. Rejection of Claims 1-6 under 35 U.S.C. §103:

The Office Action rejects 1-6 as being unpatentable over U.S. Patent No. 6,341,239 of Hyashi, et al. (hereinafter "Hyashi") in view of U.S. Patent No. 5,862,326 of Bapat (hereinafter "Bapat"). Applicants respectfully traverse this rejection on the basis of the following arguments that Hyashi in view of Bapat fails to teach or suggest all elements of the now pending claims, as described below, and hence does not obviate the claimed invention.

B. Summary of the Invention

The invention is directed to a rewriting device, system and method for rewriting data stored in a memory of a vehicle controller with new data. The rewriting device and system are capable of communicating with the vehicle controller. When a deleting or writing operation on the memory is not being performed, the rewriting device, system and method determine that communication between the rewriting device and the vehicle controller is offline if no response is received from the vehicle controller within a first determination time or reference time. When a deleting or writing operation on the memory is being performed, the determination of offline is prohibited until a second determination time elapses. The second determination time is *greater* than the first determination time or the reference time.

An advantage of the rewriting device, system and method for rewriting data stored in a memory of a vehicle controller with new data is the fact that the second determination time is *greater* than the first determination time or reference time. Accordingly, an erroneous determination of offline due to a busy state of the CPU in the vehicle controller is avoided when the rewriting device, system or method is carrying out either a deleting or a writing operation.

C. Summary of the Hyashi Patent

The Hyashi, patent is concerned with an electronic control unit (ECU) for controlling an engine for writing data into a rewritable non-volatile memory. The ECU communicates with a rewrite unit, which is an external unit that provides a rewriting

control program to rewrite storage content of a flash EEPROM. However, the Hyashi reference is not concerned with determining that communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a first determination time.

D. Summary of the Bapat Patent

The Bapat patent is concerned with a request/reply protocol for a client/server model. Bapat discloses that an acknowledge provided by the server must be received by the client within a first elapsed time period or an error occurs. If the client does not receive the acknowledge before the first time period elapses the client retransmits the request until the client receives the acknowledge from the server. The first time period is set based on a function of the network characteristics, that is, some estimate as to how long the acknowledge should take to be sent to the client by the server. The server, after acknowledging completion of the requested operation, provides the client with a reply containing the results of the requested operation. If the client does not receive the reply within a second elapsed time period, as measured from the receipt of the acknowledge, the client conveys an error to higher layers of the application software executing within the client. The value of the second elapsed time period is a function of a time estimate as to how long the server should take to perform the requested operation.

E. **The Claimed Invention Distinguishes Patentability Over the Cited References**

The inventions recited in Claims 1-6 distinguish patentability over the Hyashi reference in view of the Bapat reference. For the Hyashi reference and the Bapat reference, either alone or in combination, fail to teach or suggest each and every feature recited in Claims 1-6. Specifically, the Hyashi reference fails to teach or suggest a rewriting device is configured to determine communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a first determination time. Furthermore, the Hyashi reference fails to teach or suggest that the rewriting device is configured to prohibit the determination of offline until a second determination time elapses. The second determination time being greater than the first determination time. Moreover, the Bapat reference fails to cure the factual deficiency of

Hyashi for Bapat fails to teach or suggest that the second elapsed time period, or second determination time is *greater* than the first elapsed time period.

In contrast, Claims 1-6 recite rewriting devices for rewriting data stored in a memory of a vehicle controller for prohibiting a determination that the vehicle controller is offline until a second determination time period elapses that is *greater* than a first determination time period. Nowhere does the Hyashi reference or the Bapat reference, alone or in combination, teach or suggest such a feature. Specifically both Hyashi and Bapat fail to teach or suggest a rewriting device for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses that is *greater* than a first determination time period.

More specifically, the Examiner admits that the Hyashi reference fails to teach or suggest such a rewriting device for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses that is *greater* than a first determination time period and cites the Bapat reference for teaching or suggesting such a feature. Nevertheless, the Bapat reference fails to teach or suggest that the second determination time is *greater* than the first determination time.

The Bapat reference relates to a server-client communication protocol. It is described in the Bapat reference that TIMEOUT reply is a function of a time estimate as to how long the server 12 should take to perform the desired operation. The server and a network to the server are usually shared with a plurality of clients. Accordingly, the second elapsed time period taught by Bapat varies depending on numerous variables concerning the network characteristics and the characteristics of the server. That is, the second determination time TIMEOUT reply needs to be established in accordance with such numerous variables.

In the recited inventions, the second determination time is adjusted to a deleting time that is necessary to delete data stored in the non-volatile memory. The deleting

operation on the non-volatile memory is a time consuming operation compared to other operations performed in the ECU. As such, the recited inventions prevents communications between the rewriting device and the controller to prevent an erroneous determination that the controller is offline due to such a time consuming operation.

Generally, the non-volatile memory of the ECU is not shared with other rewriting devices. As such, a network between the ECU and the rewriting device is usually not shared with other rewriting devices. Therefore, the second determination time of the invention is hardly dependent on uncertain various factors such as network congestion. A main factor necessary to consider when the second determination time of the invention is established is the time required to delete the data stored in the non-volatile memory. Thus, the second determination time of the invention is distinct from TIMEOUT reply of the Bapat reference that needs to be established considering numerous variables concerning the network characteristics and the characteristics and the characteristics of the server.

Furthermore, the Bapat reference further fails to teach or suggest that the first and second offline determinations are separately performed. In the Bapat reference, the second TIMEOUT reply for the second error determination is activated if the client receives the Acknowledge within the first time period TIMEOUT request. That is, the second TIMEOUT reply is not activated unless it is determined in the first error determination performed based on the first TIMEOUT request that communication between the client and the server is active. Consequently, in the Bapat reference, the result of the first error determination affects whether the second error determination is performed or not.

Conversely, in Claims 1-6 the first and second offline determination timers are separately activated. When a process other than deleting operation is performed, the first determination time is used to determine whether the communication between the rewriting device and the server is offline. When deleting operation is performed, the second determination time is used to determine whether the communication is offline.

The first offline determination based on the first determination time and the second offline determination based on the second determination time are separately performed.

Moreover, any teaching or suggestion to combine the cited references while consequently allowing a reasonable expectation of success is not found in either of the cited references. The Bapat reference fails to teach or suggest that a second determination period is *greater* than a first determination period as recited in Applicants' claimed invention. Instead, in Bapat the second elapsed time period referred to can in fact be less than the first time period. This fact teaches away from the claimed invention. Those skilled in the art will recognize that depending on numerous variables concerning the network characteristics and the characteristics of the server it is entirely likely that the first time period lasts longer in time than the second elapsed time period due to network characteristics such as network traffic and congestion, level of service agreements, caching techniques employed by the server and other like variables. As such, the two cited references, either alone or in combination fail to provide a suggestion or motivation to combine and further fail to provide a reasonable expectation of success given the significant technical challenges to combine the two distinct communication techniques of multiple users of a bus versus a single user of a dedicated bus.

Accordingly, Applicants contend that the cited combination of the Hyashi reference in view the Bapat reference fail to establish a *prima facie* case of obviousness and, therefore, fail to obviate Claims 1-6. Hence, Applicants request the Examiner to reconsider and withdraw the rejection of Claims 1-6 under 35 U.S.C. §103.

F. Rejection of Claims 7-12 under 35 U.S.C. §103:

The Office Action rejects Claims 7-12 as being unpatentable over Hyashi in view of Bapat. Applicants respectfully traverse this rejection on the basis of the following arguments that Hyashi in view of Bapat fails to teach or suggest all elements of the now pending claims, as described below, and hence does not obviate the claimed invention.

The inventions recited in Claims 7-12 distinguish patentability over the Hyashi reference in view of the Bapat reference. For the Hyashi reference and the Bapat reference, either alone or in combination, fail to teach or suggest each and every feature recited in Claims 7-12. Specifically, the Hyashi reference fails to teach or suggest a rewriting unit is configured to determine communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a first determination time. Furthermore, the Hyashi reference fails to teach or suggest that the rewriting device of the present invention is configured to prohibit the determination of offline until a second determination time elapses. The second determination time being greater than the first determination time. Moreover, the Bapat reference fails to cure the factual deficiency of Hyashi for Bapat fails to teach or suggest that the second elapsed time period is *greater* than the first elapsed time period.

In contrast, Claims 7-12 recite rewriting devices for rewriting data stored in a memory of a vehicle controller for prohibiting a determination that the vehicle controller is offline until a second determination time period elapses that is *greater* than a first determination time period. Nowhere does the Hyashi reference or the Bapat reference, alone or in combination, teach or suggest such a feature. Specifically, both Hyashi and Bapat fail to teach or suggest a rewriting device for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses where the period of the second determination time is *greater* than a first determination time period.

More specifically, the Examiner admits that the Hyashi reference fails to teach or suggest such a rewriting device for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses that is *greater* than a first determination time period and cites the Bapat reference for teaching or suggesting such a feature. Nevertheless, the Bapat reference fails to teach or suggest that the second determination time is *greater* than the first determination time.

Moreover, any teaching or suggestion to combine the cited references while consequently allowing a reasonable expectation of success is not found in either of the cited references. The Bapat reference fails to teach or suggest that a second determination period is greater than a first determination period as recited in Applicants' claimed invention. Instead, in Bapat the second elapsed time period referred to, can, in fact, be less than the first time period. This fact teaches away from the claimed invention. Those skilled in the art will recognize that depending on numerous variables concerning the network characteristics and the characteristics of the server it is entirely likely that the first time period lasts longer in time than the second elapsed time period due to network characteristics such as network traffic and congestion, level of service agreements, caching techniques employed by the server and other like variables. As such, the two cited references, either alone or in combination fail to provide a suggestion or motivation to combine and further fail to provide a reasonable expectation of success given the significant technical challenges to combine the two distinct communication techniques, multiple users of a bus versus a dedicated bus.

Accordingly, Applicants contend that the cited combination of the Hyashi reference in view the Bapat reference fail to establish a *prima facie* case of obviousness and, therefore, fail to obviate Claims 7-12. Hence, Applicants request the Examiner to reconsider and withdraw the rejection of Claims 7-12 under 35 U.S.C. §103.

G. Rejection of Claims 13-19 under 35 U.S.C. §103:

The Office Action rejects Claims 13-19 as being unpatentable over Hyashi in view of Bapat. Applicants respectfully traverse this rejection on the basis of the following arguments that Hyashi in view of Bapat fails to teach or suggest all elements of the now pending claims, as described below, and hence does not obviate the claimed invention.

The inventions recited in Claims 13-19 distinguish patentability over the Hyashi reference in view of the Bapat reference. For the Hyashi reference and the Bapat reference, either alone or in combination, fail to teach or suggest each and every feature

recited in Claims 13-19. Specifically, the Hyashi reference fails to teach or suggest a rewriting device is configured to determine communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a first determination time. Furthermore, the Hyashi reference fails to teach or suggest that the rewriting device of the present invention is configured to prohibit the determination of offline until a second determination time elapses. The second determination time being greater than the first determination time. Moreover, the Bapat reference fails to cure the factual deficiency of Hyashi for Bapat fails to teach or suggest that the second elapsed time period is *greater* than the first elapsed time period.

In contrast, Claims 13-19 recite rewriting systems for rewriting data stored in a memory of a vehicle controller for prohibiting a determination that the vehicle controller is offline until a second determination time period elapses that is *greater* than a first determination time period. Nowhere does the Hyashi reference or the Bapat reference, alone or in combination, teach or suggest such a feature. Specifically, both Hyashi and Bapat fail to teach or suggest a rewriting system for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses where the period of the determination time is *greater* than a first determination time period.

More specifically, the Examiner admits that the Hyashi reference fails to teach or suggest such a rewriting device for rewriting data stored in a memory of a vehicle controller that prohibits determination that the vehicle controller is offline until a second determination time elapses that is *greater* than a first determination time period and cites the Bapat reference for teaching or suggesting such a feature. Nevertheless, the Bapat reference fails to teach or suggest that the second determination time is *greater* than the first determination time.

Moreover, any teaching or suggestion to combine the cited references while consequently allowing a reasonable expectation of success is not found in either of the cited references. The Bapat reference fails to teach or suggest that a second

determination period is *greater* than a first determination period as recited in Applicants' claimed invention. Instead, in Bapat the second elapsed time period referred to, can, in fact, be less than the first time period. This fact teaches away from the claimed invention. Those skilled in the art will recognize that depending on numerous variables concerning the network characteristics and the characteristics of the server it is entirely likely that the first time period lasts longer in time than the second elapsed time period due to network characteristics such as network traffic and congestion, level of service agreements, caching techniques employed by the server and other like variables. As such, the two cited references, either alone or in combination fail to provide a suggestion or motivation to combine and further fail to provide a reasonable expectation of success given the significant technical challenges to combine the two distinct communication techniques, multiple users of a bus versus a dedicated bus.

Accordingly, Applicants contend that the cited combination of the Hyashi reference in view the Bapat reference fail to establish a *prima facie* case of obviousness and, therefore, fail to obviate Claims 13-19. Hence, Applicants request the Examiner to reconsider and withdraw the rejection of Claims 13-19 under 35 U.S.C. §103.

H. Rejection of Claims 20-23 under 35 U.S.C. §103:

The Office Action rejects Claims 20-23 as being unpatentable over Hyashi in view of Bapat. Applicants respectfully traverse this rejection on the basis of the following arguments that Hyashi in view of Bapat fails to teach or suggest all elements of the now pending claims, as described below, and hence does not obviate the claimed invention.

The inventions recited in Claims 20-23 distinguish patentability over the Hyashi reference in view of the Bapat reference. For the Hyashi reference and the Bapat reference, either alone or in combination, fail to teach or suggest each and every feature recited in Claims 20-23. Specifically, the Hyashi reference fails to teach or suggest a method for rewriting data stored in a memory of a vehicle controller that determines if communication between the rewriting unit and the ECU is off-line when no response is

received from the ECU within a determination time. Furthermore, the Hyashi reference fails to teach or suggest that the determination time is greater than a reference time for the determination of offline when a deleting operation is not being performed in the vehicle controller. Moreover, the Bapat reference fails to cure the factual deficiency of Hyashi for Bapat fails to teach or suggest that the determination time is *greater* than a reference time for the determination of offline when a deleting operation is not being performed in the vehicle controller.

In contrast, Claims 20-23 recite method for rewriting data stored in a memory of a vehicle controller that determines if communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a determination time. The method further determines that the determination time is greater than a reference time for the determination of offline when a deleting operation is not being performed in the vehicle controller. Nowhere does the Hyashi reference or the Bapat reference, alone or in combination, teach or suggest such a feature. Specifically, both Hyashi and Bapat fail to teach or suggest a method for rewriting data stored in a memory of a vehicle controller that determines if communication between the rewriting unit and the ECU is off-line when no response is received from the ECU within a determination time. Where the method further determines that the determination time is greater than a reference time for the determination of offline when a deleting operation is not being performed in the vehicle controller.

More specifically, the Examiner admits that the Hyashi reference fails to teach or suggest such each and every feature of the recited method and cites the Bapat reference for teaching or suggesting the determination time is greater than a reference time for the determination of offline when a deleting operation is not being performed in the vehicle controller. Nevertheless, the Bapat reference also fails to teach or suggest that the determination time is *greater* than a reference time, and is adjusted to a deleting time that is necessary to delete data stored in the non-volatile memory.

Moreover, any teaching or suggestion to combine the cited references while consequently allowing a reasonable expectation of success is not found in either of the cited references. The Bapat reference fails to teach or suggest that a determination time is *greater* than a reference time as recited in Applicants' claimed invention. Instead, in Bapat the second elapsed time period referred to, can, in fact, be less than the first time period. This fact teaches away from the claimed invention. Those skilled in the art will recognize that depending on numerous variables concerning the network characteristics and the characteristics of the server it is entirely likely that the first time period lasts longer in time than the second elapsed time period due to network characteristics such as network traffic and congestion, level of service agreements, caching techniques employed by the server and other like variables. As such, the two cited references, either alone or in combination fail to provide a suggestion or motivation to combine and further fail to provide a reasonable expectation of success given the significant technical challenges to combine the two distinct communication techniques of multiple users of a bus versus a single user of a dedicated bus.

Accordingly, Applicants contend that the cited combination of the Hyashi reference in view the Bapat reference fail to establish a *prima facie* case of obviousness and, therefore, fail to obviate Claims 20-23. Hence, Applicants request the Examiner to reconsider and withdraw the rejection of Claims 20-23 under 35 U.S.C. §103.

New Claims

New Claim 24 depends either directly or indirectly from independent Claim 1, and, therefore incorporates the novel features of Claim 1. Accordingly, the Hyashi reference and the Bapat reference, either alone or in combination, fail to disclose, teach or suggest all of the features of new Claim 24. As such, new Claim 24 is patentably distinct from each of the cited references either alone or in combination.

New Claim 25 depends either directly or indirectly from independent Claim 7, and, therefore incorporates the novel features of Claim 7. Accordingly, the Hyashi reference and the Bapat reference, either alone or in combination, fail to disclose, teach

or suggest all of the features of new Claim 25. As such, new Claim 25 is patentably distinct from each of the cited references either alone or in combination.

New Claim 26 depends either directly or indirectly from independent Claim 13, and, therefore incorporates the novel features of Claim 13. Accordingly, the Hyashi reference and the Bapat reference, either alone or in combination, fail to disclose, teach or suggest all of the features of new Claim 26. As such, new Claim 26 is patentably distinct from each of the cited references either alone or in combination.

New Claims 27 and 28 each recite a rewriting device for rewriting data stored in a non-volatile memory of a vehicle controller that includes a feature where a first and second determination time are measured from the time at which the rewriting device sends a request to the vehicle controller. Thus, when a deleting/writing operation is being performed, the vehicle controller is determined to be offline if an elapsed time from the transmission of the request is greater than the second determination time. Nowhere does Hyashi or Bapat, either alone or in combination, disclose, teach or suggest such a feature. Accordingly, new Claims 27 and 28 are patentably distinct from each of the cited references either alone or in combination.

New Claim 29 recites a rewriting device for rewriting data stored in a memory of a vehicle controller. The rewriting device includes a means for communicating with the vehicle controller and is configured to determine that communication between the rewriting device and the vehicle controller is offline when no response is received from the vehicle controller within a first determination time. As such, when a deleting operation of the data is being performed, the rewriting device is configured to prohibit the determination of offline until a second determination time elapses, the second determination time being greater than the first determination time. Nowhere does Hyashi or Bapat, either alone or in combination, disclose, teach or suggest such features. Accordingly, new Claim 29 is patentably distinct from each of the cited references either alone or in combination.

CONCLUSION

For the foregoing reasons, Applicants contend that Claims 1-29 define over the cited art. If there are any remaining issues, an opportunity for an interview is requested prior to the issuance of another Office Action. If the above amendments are not deemed to place this case in condition for allowance, the Examiner is urged to call Applicants' representative at the telephone number listed below.

Respectfully submitted,
LAHIVE & COCKFIELD, LLP

David R. Burns
Reg. No. 46,590
Attorney for Applicants

28 State Street
Boston, MA 02109
(617) 227-7400
(617) 742-4214

Date: May 21, 2003

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend Claim 13 as follows:

13. (Amended) [The] A rewriting system for rewriting data stored in a memory of a vehicle controller with new data, the system comprising:

a rewriting device capable of communicating with the vehicle controller, the rewriting device configured to determine that communication between the rewriting device and the vehicle controller is offline if no response is received from the vehicle controller within a first determination time; and

wherein, when deleting or writing operation on the memory is being performed, the determination of offline is prohibited until a second determination time elapses, the second determination time being greater than the first determination time.

OIPE JC112 MAY 21 2003 PATENT & TRADEMARK OFFICE

Approved KM 7/28/03

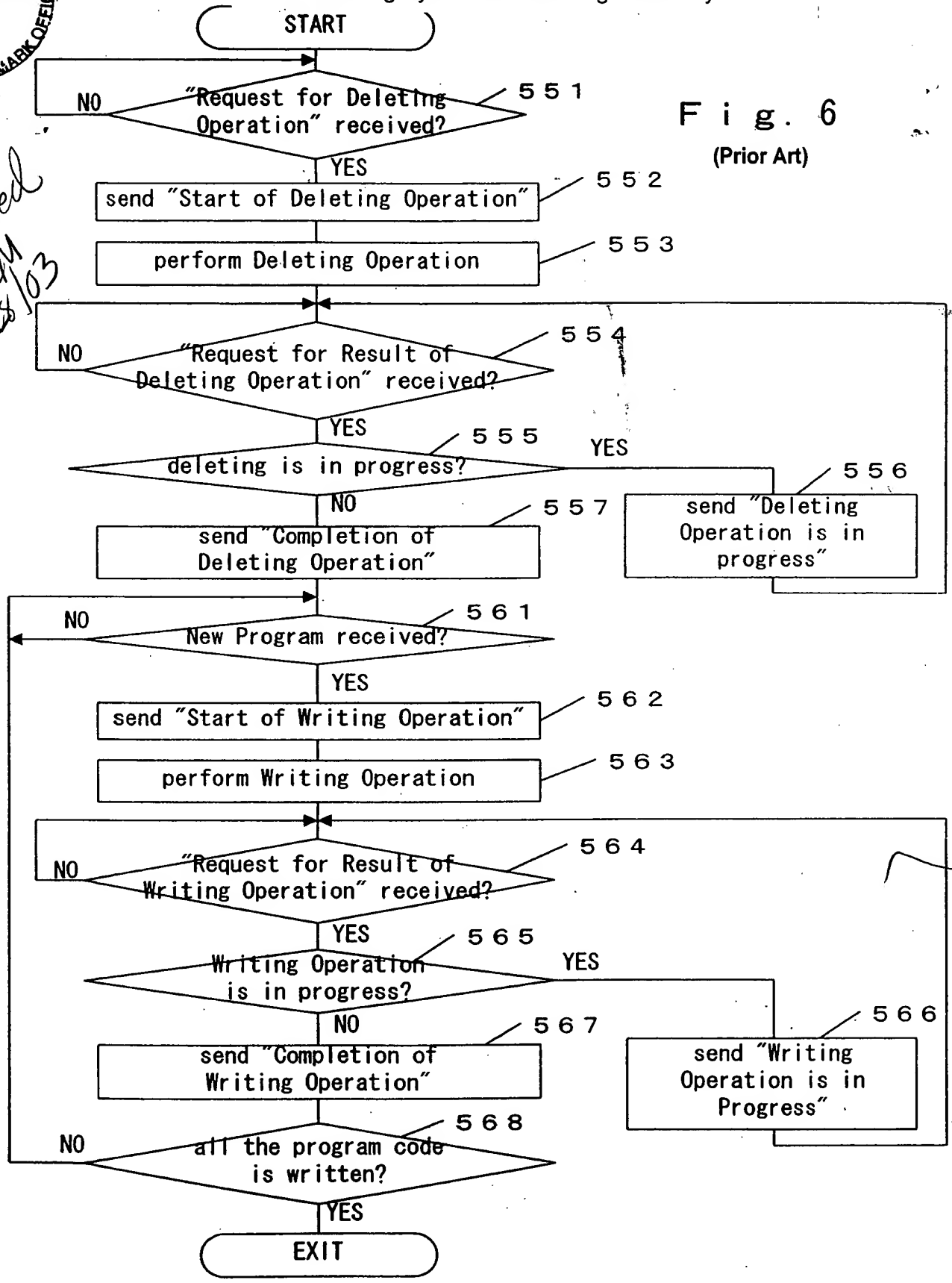

Fig. 6
(Prior Art)

OIPE JC112
MAY 21 2003
PATENT & TRADEMARK OFFICE

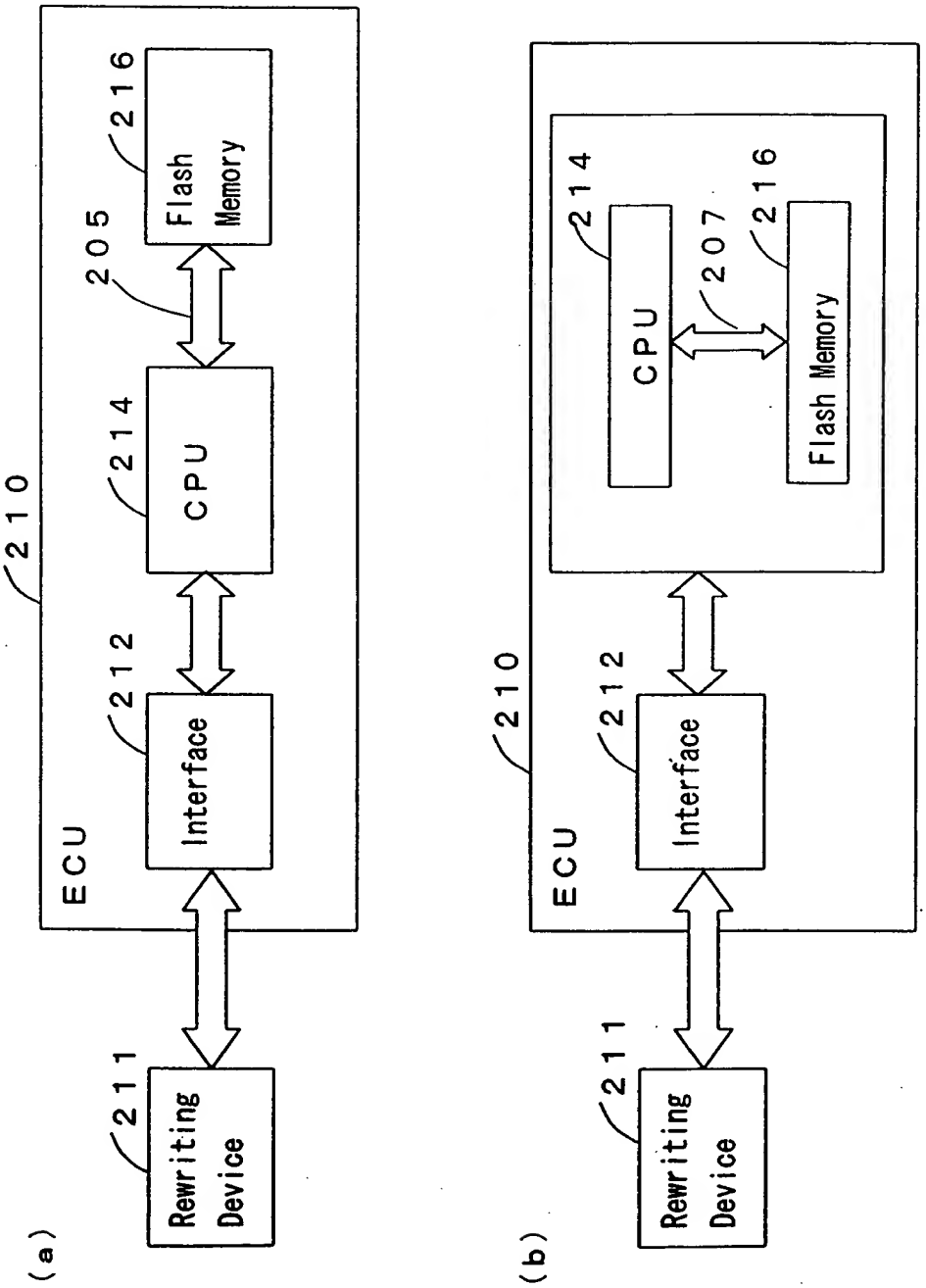

Fig. 7
(Prior Art)